^{60}Ni(n,γ),(pol n,γ) E=thermal 2004Ra23,1993Ha05,1972Ko15

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	ENSDF	20-Jan-2020

No changes made since the 2015 update, except for S(n) from 2017Wa10.

2004Ra23: E=thermal. Measured Eγ, Iγ, $\gamma\gamma$ with a coaxial intrinsic Ge detector positioned inside a NaI(Tl) annulus. This Ge detector was operated either in the Compton-suppressed mode or in the pair-spectrometer mode.

1993Ha05,1993HaZV: measured Eγ, Iγ, Compton suppression and pair spectrometer, enriched target.

1972Ko15: measured Eγ, Iγ, CP(γ), semi, enriched target.

2007ChZX: PGNAA project, 36 secondary and 15 primary γ rays were reported in the measurements at Budapest .

1992Ku17: reanalysis of the data from 1991Ul01 with molecular dynamics simulations and an improved interatomic potential.

1991Ul01: measured lifetime by the γ-ray induced Doppler (GRID) method in thermal neutron capture.

Others: 1997Ve03, 1977Is01, 1970GaZQ, 1975Wi06, 1967Ba79, 1964Co13, 1964Za02.

All data are from 2004Ra23, unless otherwise indicated.

^{61}Ni Levels

E(level)[†]	J$^{\pi}$	T$_{1/2}$[‡]
0.0	3/2$^-$	
67.41[#] *3*	5/2$^-$	
282.973 *21*	1/2$^-$[b]	
656.039[#] *22*	1/2$^-$	
908.59[#] *3*	5/2$^-$	
1015.32[#] *9*	7/2$^-$	
1099.684[#] *22*	3/2$^-$[b]	0.18 ps *8*
1132.41 *3*	5/2$^-$	
1185.301[#] *22*	3/2$^-$[b]	
1454.84[#] *11*	7/2$^-$	
1609.80[#] *5*	5/2$^-$	
1729.63[#] *3*	3/2$^-$	
1998.12 *7*	5/2$^-$	
2123.949[#] *19*	1/2$^-$[b]	51 fs *10*
2639.51 *5*	1/2$^-$,3/2$^-$	
2707.63[#] *9*		
2765.03[#] *7*	3/2$^-$	
2862.94 *9*	1/2$^-$,3/2$^-$	
3062.16 *5*	1/2$^+$	
3144.98[#] *3*		
3231.67 *4*	1/2$^-$,3/2$^-$	
3415.14 *4*	1/2$^-$,3/2$^-$	
3525.60[#] *8*		
3668.99[#] *4*	1/2$^-$,3/2$^-$	
3711.49 *6*	1/2$^-$,3/2$^-$	
3738.34[@] *18*	(1/2$^+$)	
3776.80 *9*	(1/2$^-$,3/2$^-$)	
3869.99 *7*		
4178.90 *14*		
4204.3 *4*		
4239.76[#] *5*		
4439.88[#] *13*		
4514.69 *13*		

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^{60}Ni(n,γ),(pol n,γ) E=thermal 2004Ra23,1993Ha05,1972Ko15 (continued)

^{61}Ni Levels (continued)

E(level)[†]	J$^{\pi}$	Comments
4713.08?[&] *8*		
4793.12 *16*		
5036.24[@] *9*		
5116.61[@] *17*	1/2$^-$,3/2$^-$	
5390.85 *14*		
5955.52[#] *17*		
6575.70 *18*		
6615.8 *3*		
(7820.113[#a] *21*)	1/2$^+$	E(level): S(n)=7820.10 *5* (2017Wa10).

[†] From least-squares fit to Eγ data.
[‡] From 1991Ul01 using the grid method.
[#] Intensity imbalance [I$_\gamma$(in)-I$_\gamma$(out)] at this level is negative.
[@] Intensity imbalance [I$_\gamma$(in)-I$_\gamma$(out)] at this level is positive.
[&] E(level): from 1993Ha05, only 4714.2 *7* γ observed in 2004Ra23 is unplaced.
[a] E(level): 7020.113 in Table XVI of 2004Ra23 is a misprint. S(n)=7820.10 *5* (2017Wa10).
[b] From 1972Ko15 measured circular polarization of γ-rays in ^{60}Ni(pol n,γ) reaction.

γ(^{61}Ni)

Iγ normalization: σ=2.34 b 5 (2004Ra23). The intensities listed by 2004Ra23 are in units of millibarns. To obtain intensities per 100 neutron captures, multiply by 0.0427.

E$_\gamma$	I$_\gamma$[†h]	E$_i$(level)	J$^{\pi}_i$	E$_f$	J$^{\pi}_f$
67.42 *20*	32.9 *6*	67.41	5/2$^-$	0.0	3/2$^-$
[x]159.46 *20*	0.18 *3*				
191.16 *8*	0.64 *5*	1099.684	3/2$^-$	908.59	5/2$^-$
215.51 *9*	0.38 *3*	282.973	1/2$^-$	67.41	5/2$^-$
277.0 *5*	0.37 *6*	1185.301	3/2$^-$	908.59	5/2$^-$
282.99 *5*	812 *27*	282.973	1/2$^-$	0.0	3/2$^-$
[x]355.85 *14*	0.29 *3*				
373.07 *5*	4.27 *5*	656.039	1/2$^-$	282.973	1/2$^-$
394.33 *5*	1.77 *6*	2123.949	1/2$^-$	1729.63	3/2$^-$
477.6 *5*	0.34 *7*	1609.80	5/2$^-$	1132.41	5/2$^-$
514.33 *14*	0.69 *8*	2123.949	1/2$^-$	1609.80	5/2$^-$
529.27 *3*	5.37 *6*	1185.301	3/2$^-$	656.039	1/2$^-$
546.3 *3*	0.14 *4*	1454.84	7/2$^-$	908.59	5/2$^-$
588.59 *5*	2.33 *5*	656.039	1/2$^-$	67.41	5/2$^-$
625.60 *17*	0.30 *5*	908.59	5/2$^-$	282.973	1/2$^-$
629.86 *25*	0.20 *4*	1729.63	3/2$^-$	1099.684	3/2$^-$
650.1 *4*	0.20 *6*	3415.14	1/2$^-$,3/2$^-$	2765.03	3/2$^-$
[x]651.14 *25*	0.50 *11*				
656.02 *4*	20.39 *22*	656.039	1/2$^-$	0.0	3/2$^-$
701.22 *11*	0.61 *5*	1609.80	5/2$^-$	908.59	5/2$^-$
[x]780.4 *3*	0.21 *4*				
806.0 *3*	0.19 *6*	3668.99	1/2$^-$,3/2$^-$	2862.94	1/2$^-$,3/2$^-$
816.70 *4*	38.7 *4*	1099.684	3/2$^-$	282.973	1/2$^-$
820.90 *10*	0.87 *6*	1729.63	3/2$^-$	908.59	5/2$^-$

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^{60}Ni(n,γ),(pol n,γ) E=thermal 2004Ra23,1993Ha05,1972Ko15 (continued)

γ(^{61}Ni) (continued)

E_γ	I_γ [†h]	E_i(level)	J^π_i	E_f	J^π_f
841.2 *1*	1.46 *7*	908.59	5/2⁻	67.41	5/2⁻
848.54 *13*	0.58 *5*	3711.49	1/2⁻,3/2⁻	2862.94	1/2⁻,3/2⁻
[x]888.0 *3*	0.23 *5*				
[x]900.2 *3*	0.26 *5*				
902.27 *7*	1.27 *5*	1185.301	3/2⁻	282.973	1/2⁻
908.59 *4*	7.66 *9*	908.59	5/2⁻	0.0	3/2⁻
938.62 *4*	16.28 *17*	2123.949	1/2⁻	1185.301	3/2⁻
947.90 *9*	0.82 *6*	1015.32	7/2⁻	67.41	5/2⁻
[x]977.12 *18*	0.30 *5*				
[x]980.81 *25*	0.24 *5*				
982.6 *4*	0.14 *5*	1998.12	5/2⁻	1015.32	7/2⁻
[x]998.0 *4*	0.14 *5*				
1015.28 *24*	0.29 *6*	1015.32	7/2⁻	0.0	3/2⁻
1021.06 *8*	0.95 *6*	3144.98		2123.949	1/2⁻
1024.27 *7*	1.22 *6*	2123.949	1/2⁻	1099.684	3/2⁻
1032.25 *4*	6.06 *9*	1099.684	3/2⁻	67.41	5/2⁻
[x]1039.8 *3*	0.26 *5*				
1065.01 *5*	3.29 *6*	1132.41	5/2⁻	67.41	5/2⁻
1073.52 *6*	1.85 *6*	1729.63	3/2⁻	656.039	1/2⁻
1089.65 *22*	0.37 *6*	1998.12	5/2⁻	908.59	5/2⁻
1099.67 *4*	27.6 *3*	1099.684	3/2⁻	0.0	3/2⁻
1107.71 *9*	0.68 *6*	3231.67	1/2⁻,3/2⁻	2123.949	1/2⁻
1116.46 *25*	0.42 *6*	4178.90		3062.16	1/2⁺
1118 *1*	0.69 *8*	1185.301	3/2⁻	67.41	5/2⁻
1132.40 *4*	5.89 *9*	1132.41	5/2⁻	0.0	3/2⁻
1146.69 *16*	0.69 *7*	3144.98		1998.12	5/2⁻
1154.9 *3*	0.41 *6*	2765.03	3/2⁻	1609.80	5/2⁻
1185.29 *4*	52.6 *6*	1185.301	3/2⁻	0.0	3/2⁻
[x]1188.18 *12*	0.47 *7*				
[x]1195.3 *4*	0.24 *6*				
1204.2 *3*	0.28 *5*	(7820.113)	1/2⁺	6615.8	
1215.35 *5*	2.00 *6*	2123.949	1/2⁻	908.59	5/2⁻
1233.4 *3*	0.42 *7*	3231.67	1/2⁻,3/2⁻	1998.12	5/2⁻
1244.39 *18*	0.67 *7*	(7820.113)	1/2⁺	6575.70	
1253.23 *20*	0.57 *7*	2862.94	1/2⁻,3/2⁻	1609.80	5/2⁻
[x]1315.2 *4*	0.20 *5*				
1342.3 *4*	0.26 *6*	1998.12	5/2⁻	656.039	1/2⁻
1377.3[‡] *4*	0.23 *5*	4439.88		3062.16	1/2⁺
1387.6 *4*	0.21 *5*	1454.84	7/2⁻	67.41	5/2⁻
1415.43 *10*	0.90 *7*	3144.98		1729.63	3/2⁻
[x]1434.20 *23*	0.41 *5*				
1446.71 *6*	2.08 *7*	1729.63	3/2⁻	282.973	1/2⁻
1454.80 *12*	0.87 *6*	1454.84	7/2⁻	0.0	3/2⁻
[x]1488.0 *3*	0.34 *6*				
1502.01 *10*	0.77 *6*	3231.67	1/2⁻,3/2⁻	1729.63	3/2⁻
1536 *1*	0.61 *8*	3144.98		1609.80	5/2⁻
1542.42 *7*	2.50 *9*	1609.80	5/2⁻	67.41	5/2⁻
1580.03 *20*	0.46 *6*	2765.03	3/2⁻	1185.301	3/2⁻
1587.77 *23*	0.48 *6*	3711.49	1/2⁻,3/2⁻	2123.949	1/2⁻
[x]1601.9 *4*	0.23 *8*				
1610 *1*	2.04 *9*	1609.80	5/2⁻	0.0	3/2⁻
1621.86 *8*	2.02 *9*	3231.67	1/2⁻,3/2⁻	1609.80	5/2⁻
1633.08 *20*	0.70 *9*	2765.03	3/2⁻	1132.41	5/2⁻
[x]1645.0 *3*	0.35 *6*				
1662 *1*	2.13 *7*	1729.63	3/2⁻	67.41	5/2⁻
1665 *1*	0.92 *6*	2765.03	3/2⁻	1099.684	3/2⁻

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^{60}Ni(n,γ),(pol n,γ) E=thermal 2004Ra23,1993Ha05,1972Ko15 (continued)

γ(^{61}Ni) (continued)

E_γ	I_γ [†h]	E_i(level)	J^π_i	E_f	J^π_f
1685.54 *10*	1.13 *7*	3415.14	1/2⁻,3/2⁻	1729.63	3/2⁻
[x]1716.46 *25*	0.63 *8*				
1721.5 *5*	0.26 *7*	5390.85		3668.99	1/2⁻,3/2⁻
1729.74 *8*	2.03 *9*	1729.63	3/2⁻	0.0	3/2⁻
1750.9 *6*	0.21 *6*	5955.52		4204.3	
[x]1760.2 *4*	0.35 *6*				
1778.83 *12*	1.09 *7*	3776.80	(1/2⁻,3/2⁻)	1998.12	5/2⁻
1795.61 *24*	0.50 *7*	3525.60		1729.63	3/2⁻
[x]1819.7 *6*	0.25 *7*				
1840.94 *5*	4.78 *12*	2123.949	1/2⁻	282.973	1/2⁻
[x]1843.87 *17*	1.15 *9*				
1864.55 *18*	0.80 *8*	(7820.113)	1/2⁺	5955.52	
1877.1 *4*	0.39 *8*	3062.16	1/2⁺	1185.301	3/2⁻
1931.2 *7*	0.23 *6*	1998.12	5/2⁻	67.41	5/2⁻
[x]1943.0 *5*	0.23 *7*				
1959.71 *7*	1.77 *8*	3144.98		1185.301	3/2⁻
1998.10 *11*	1.44 *10*	1998.12	5/2⁻	0.0	3/2⁻
2012.47 *22*	0.81 *12*	3144.98		1132.41	5/2⁻
2045.32 *5*	4.76 *13*	3144.98		1099.684	3/2⁻
2085.7[#] *3*	0.62 *9*	4793.12		2707.63	
[x]2088.26 *25*	0.79 *10*				
[x]2093.10 *21*	0.81 *9*				
2099.27 *7*	3.34 *10*	3231.67	1/2⁻,3/2⁻	1132.41	5/2⁻
2108.99 *18*	1.12 *10*	2765.03	3/2⁻	656.039	1/2⁻
[x]2111.6 *4*	0.47 *10*				
2115.2 *3*	0.49 *11*	4239.76		2123.949	1/2⁻
2123.90 *3*	145.6 *15*	2123.949	1/2⁻	0.0	3/2⁻
[x]2126.9 *3*	1.19 *16*				
2207.0 *3*	0.86 *14*	2862.94	1/2⁻,3/2⁻	656.039	1/2⁻
2229.84 *20*	0.96 *22*	3415.14	1/2⁻,3/2⁻	1185.301	3/2⁻
2282.66 *14*	0.70 *6*	3415.14	1/2⁻,3/2⁻	1132.41	5/2⁻
[x]2301.3 *4*	0.28 *6*				
[x]2306.3 *5*	0.24 *6*				
2315.35 *16*	0.82 *7*	3415.14	1/2⁻,3/2⁻	1099.684	3/2⁻
2340.56 *22*	0.46 *6*	3525.60		1185.301	3/2⁻
[x]2347.5 *4*	0.28 *6*				
2351.3 *4*	0.30 *6*	5116.61	1/2⁻,3/2⁻	2765.03	3/2⁻
2356.6 *3*	0.37 *6*	2639.51	1/2⁻,3/2⁻	282.973	1/2⁻
[x]2387.21 *14*	0.94 *7*				
2406.05 *6*	3.24 *9*	3062.16	1/2⁺	656.039	1/2⁻
2429.15 *14*	1.11 *8*	(7820.113)	1/2⁺	5390.85	
[x]2432.2 *4*	0.39 *7*				
[x]2436.14 *13*	1.34 *8*				
[x]2455.5 *6*	0.21 *6*				
[x]2460.7 *4*	0.46 *7*				
[x]2463.1 *7*	0.25 *7*				
2482.07 *18*	1.10 *15*	2765.03	3/2⁻	282.973	1/2⁻
2483.6 *7*	0.32 *14*	3668.99	1/2⁻,3/2⁻	1185.301	3/2⁻
2488.84 *12*	1.16 *7*	3144.98		656.039	1/2⁻
2510.0[@] *3*	0.53 *7*	4239.76		1729.63	3/2⁻
2575.63 *14*	0.89 *7*	3231.67	1/2⁻,3/2⁻	656.039	1/2⁻
2579.84 *15*	0.91 *7*	2862.94	1/2⁻,3/2⁻	282.973	1/2⁻
2611.73 *16*	1.01 *8*	3711.49	1/2⁻,3/2⁻	1099.684	3/2⁻
[x]2620.7 *5*	0.35 *8*				
[x]2634.0 *4*	0.38 *7*				
2639.44 *6*	3.90 *9*	2639.51	1/2⁻,3/2⁻	0.0	3/2⁻

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^{60}Ni(n,γ),(pol n,γ) E=thermal 2004Ra23,1993Ha05,1972Ko15 (continued)

γ(^{61}Ni) (continued)

E_γ	I_γ[†h]	E_i(level)	J^π_i	E_f	J^π_f
2644.23 *22*	0.61 *7*	3776.80	(1/2⁻,3/2⁻)	1132.41	5/2⁻
2676.5 *5*	0.30 *8*	3776.80	(1/2⁻,3/2⁻)	1099.684	3/2⁻
2684.58 *25*	0.51 *8*	3869.99		1185.301	3/2⁻
[x]2698.22 *22*	0.94 *9*				
2703.38 *19*	1.25 *9*	(7820.113)	1/2⁺	5116.61	1/2⁻,3/2⁻
2707.58 *9*	2.60 *11*	2707.63		0.0	3/2⁻
2759.38 *19*	1.37 *8*	3415.14	1/2⁻,3/2⁻	656.039	1/2⁻
2764.69 *16*	1.60 *9*	2765.03	3/2⁻	0.0	3/2⁻
[x]2771.4 *7*	0.25 *8*				
2778.9 *4*	0.44 *8*	3062.16	1/2⁺	282.973	1/2⁻
2783.80 *9*	2.41 *10*	(7820.113)	1/2⁺	5036.24	
2795.3[&] *4*	0.47 *8*	2862.94	1/2⁻,3/2⁻	67.41	5/2⁻
2802.7 *4*	0.40 *8*	3711.49	1/2⁻,3/2⁻	908.59	5/2⁻
[x]2816.95 *14*	1.45 *8*				
[x]2823.07 *16*	1.18 *9*				
[x]2856.48 *13*	1.33 *7*				
2861.95 *4*	6.59 *11*	3144.98		282.973	1/2⁻
[x]2903.0 *7*	0.27 *11*				
[x]2914.5 *7*	0.25 *8*				
[x]2933.80 *12*	2.96 *12*				
[x]2947.5 *7*	0.25 *7*				
[x]2977.79 *25*	0.69 *7*				
[x]3000.2 *5*	0.36 *8*				
3012.66 *11*	2.89 *10*	3668.99	1/2⁻,3/2⁻	656.039	1/2⁻
3027.02 *18*	1.06 *8*	(7820.113)	1/2⁺	4793.12	
3054.36 *18*	0.92 *7*	4239.76		1185.301	3/2⁻
3062.16 *10*	1.75 *8*	3062.16	1/2⁺	0.0	3/2⁻
3077.5 *3*	0.60 *7*	3144.98		67.41	5/2⁻
3082.21 *21*	0.78 *8*	3738.34	(1/2⁺)	656.039	1/2⁻
3104.6 *8*	0.47 *15*	4204.3		1099.684	3/2⁻
3106.8 *4*	1.30 *16*	4239.76		1132.41	5/2⁻
[x]3129.1 *6*	0.43 *10*				
3132.05 *8*	5.10 *13*	3415.14	1/2⁻,3/2⁻	282.973	1/2⁻
3144.7 *7*	4.09 *13*	3144.98		0.0	3/2⁻
3164.49 *24*	0.84 *10*	3231.67	1/2⁻,3/2⁻	67.41	5/2⁻
[x]3180.8 *4*	0.50 *11*				
3213.9 *3*	0.64 *9*	3869.99		656.039	1/2⁻
3231.47 *9*	2.38 *9*	3231.67	1/2⁻,3/2⁻	0.0	3/2⁻
3242.59 *11*	1.87 *9*	3525.60		282.973	1/2⁻
3254.8 *6*	0.28 *8*	4439.88		1185.301	3/2⁻
3305.30 *14*	1.62 *9*	(7820.113)	1/2⁺	4514.69	
3328.6 *6*	0.35 *8*	4514.69		1185.301	3/2⁻
3347.7 *4*	0.64 *9*	3415.14	1/2⁻,3/2⁻	67.41	5/2⁻
[x]3359.5 *3*	0.38 *9*				
[x]3369.1 *4*	0.53 *8*				
3380.29 *21*	2.38 *23*	(7820.113)	1/2⁺	4439.88	
3382.3 *7*	0.80 *21*	4514.69		1132.41	5/2⁻
3385.92 *5*	9.23 *13*	3668.99	1/2⁻,3/2⁻	282.973	1/2⁻
[x]3391.6 *3*	0.70 *9*				
[x]3398.6 *3*	1.16 *15*				
3415.04[a] *6*	5.05 *11*	3415.14	1/2⁻,3/2⁻	0.0	3/2⁻
3525.1 *9*	0.20 *7*	3525.60		0.0	3/2⁻
3531.51 *20*	2.00 *18*	4439.88		908.59	5/2⁻
3580.18 *7*	9.8 *3*	(7820.113)	1/2⁺	4239.76	
3583.47 *14*	3.10 *19*	4239.76		656.039	1/2⁻
3601.8 *4*	0.64 *12*	3668.99	1/2⁻,3/2⁻	67.41	5/2⁻

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^{60}Ni(n,γ),(pol n,γ) E=thermal 2004Ra23,1993Ha05,1972Ko15 (continued)

γ(^{61}Ni) (continued)

E_γ	I_γ [†h]	E_i(level)	J^π_i	E_f	J^π_f
3615.9 *4*	0.56 *11*	(7820.113)	1/2+	4204.3	
3640.99 *18*	1.95 *16*	(7820.113)	1/2+	4178.90	
3644.0 *4*	0.90 *15*	3711.49	1/2−,3/2−	67.41	5/2−
[x]3687.24 *21*	3.00 *25*				
3709.3 *5*	1.2 *3*	3776.80	(1/2−,3/2−)	67.41	5/2−
3711.42 *11*	6.8 *3*	3711.49	1/2−,3/2−	0.0	3/2−
3850.7[b] *6*	0.53 *14*	5036.24		1185.301	3/2−
3869.83 *12*	3.81 *22*	3869.99		0.0	3/2−
3949.97 *9*	5.61 *23*	(7820.113)	1/2+	3869.99	
[x]3974.37 *22*	1.39 *13*				
4043.33 *14*	2.66 *18*	(7820.113)	1/2+	3776.80	(1/2−,3/2−)
4081.6 *3*	1.64 *15*	(7820.113)	1/2+	3738.34	(1/2+)
4108.52 *8*	10.5 *3*	(7820.113)	1/2+	3711.49	1/2−,3/2−
4111.5 *4*	1.05 *19*	4178.90		67.41	5/2−
4150.92 *6*	11.8 *4*	(7820.113)	1/2+	3668.99	1/2−,3/2−
4171.7 *6*	0.45 *12*	4239.76		67.41	5/2−
4225.9 *8*	0.59 *18*	5955.52		1729.63	3/2−
[x]4228.6 *7*	0.75 *18*				
4239.66 *9*	5.43 *24*	4239.76		0.0	3/2−
[x]4284.0 *6*	0.25 *9*				
4294.44 *15*	1.99 *13*	(7820.113)	1/2+	3525.60	
4404.82 *5*	16.2 *4*	(7820.113)	1/2+	3415.14	1/2−,3/2−
4439.2 *4*	0.83 *12*	4439.88		0.0	3/2−
4514.6 *4*	0.83 *12*	4514.69		0.0	3/2−
4588.26 *6*	11.7 *3*	(7820.113)	1/2+	3231.67	1/2−,3/2−
4675.05 *5*	20.3 *3*	(7820.113)	1/2+	3144.98	
[x]4714.2 *7*	0.49 *13*				
4753.0 *6*	0.72 *15*	5036.24		282.973	1/2−
4757.86 *10*	4.98 *25*	(7820.113)	1/2+	3062.16	1/2+
4793.2 *7*	0.51 *13*	4793.12		0.0	3/2−
[x]4818.8 *4*	0.89 *14*				
4833.2 *9*	0.34 *13*	5116.61	1/2−,3/2−	282.973	1/2−
4957.1 *4*	2.2 *3*	(7820.113)	1/2+	2862.94	1/2−,3/2−
5055.02 *12*	4.22 *20*	(7820.113)	1/2+	2765.03	3/2−
5112.1 *5*	0.84 *13*	(7820.113)	1/2+	2707.63	
5180.36 *9*	3.93 *14*	(7820.113)	1/2+	2639.51	1/2−,3/2−
5322.2 *7*	0.73 *12*	5390.85		67.41	5/2−
5515.4 *7*	0.45 *12*	6615.8		1099.684	3/2−
5695.86[c] *4*	157 *3*	(7820.113)	1/2+	2123.949	1/2−
5955.3 *8*	0.41 *12*	5955.52		0.0	3/2−
6090.5 *5*	0.72 *12*	(7820.113)	1/2+	1729.63	3/2−
[x]6105.8 *4*	0.33 *13*				
6292.3 *7*	0.53 *13*	6575.70		282.973	1/2−
6634.40[d] *5*	29.5 *4*	(7820.113)	1/2+	1185.301	3/2−
6719.97[e] *5*	55.8 *7*	(7820.113)	1/2+	1099.684	3/2−
7163.9 *5*	1.3 *3*	(7820.113)	1/2+	656.039	1/2−
7536.62[f] *6*	705 *9*	(7820.113)	1/2+	282.973	1/2−
7819.56[g] *6*	1236 *15*	(7820.113)	1/2+	0.0	3/2−

† Absolute cross sections (2004Ra23) are in millibarns.
‡ Alternative placement:4240 –>2863.
# Alternative placement:5956 –>3870.

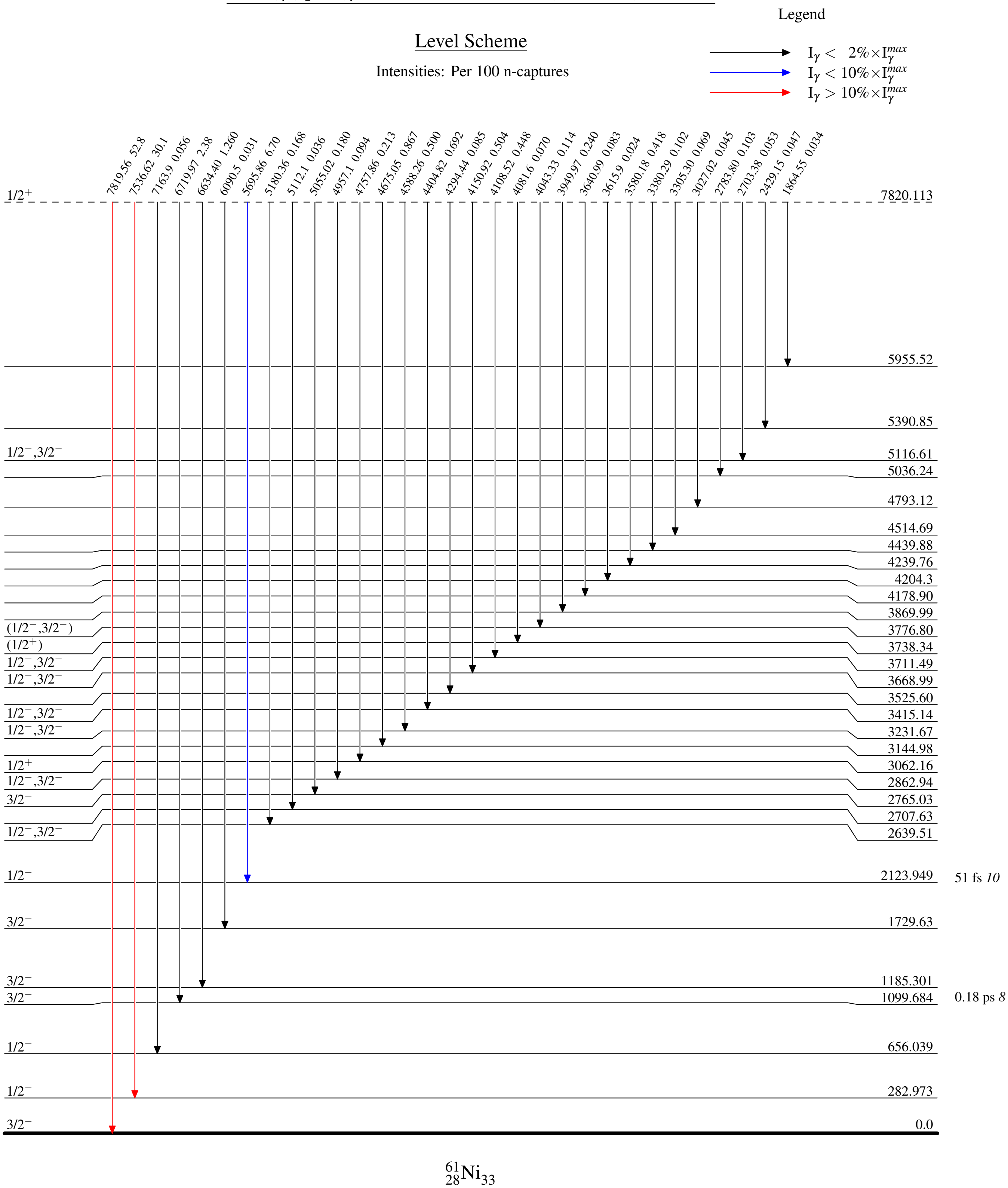
Continued on next page (footnotes at end of table)

^{60}Ni(n,γ),(pol n,γ) E=thermal 2004Ra23,1993Ha05,1972Ko15 (continued)

γ(^{61}Ni) (continued)

[@] Alternative placement:3526 –>1015.
[&] Alternative placement:4793 –>1998.
[a] Alternative placement:4515 –>1100.
[b] Alternative placement:6616 –>2765.
[c] Circular polarization coefficient R=+0.92 *8* (1972Ko15).
[d] Circular polarization coefficient R=−1.0 *4* (1972Ko15).
[e] Circular polarization coefficient R=−0.6 *2* (1972Ko15).
[f] Circular polarization coefficient R=+1.05 *3* (1972Ko15).
[g] Circular polarization coefficient R=−0.48 *2* (1972Ko15).
[h] For intensity per 100 neutron captures, multiply by 0.0427.
[x] γ ray not placed in level scheme.

^{60}Ni(n,γ),(pol n,γ) E=thermal 2004Ra23,1993Ha05,1972Ko15



^{60}Ni(n,γ),(pol n,γ) E=thermal 2004Ra23,1993Ha05,1972Ko15

Level Scheme (continued)

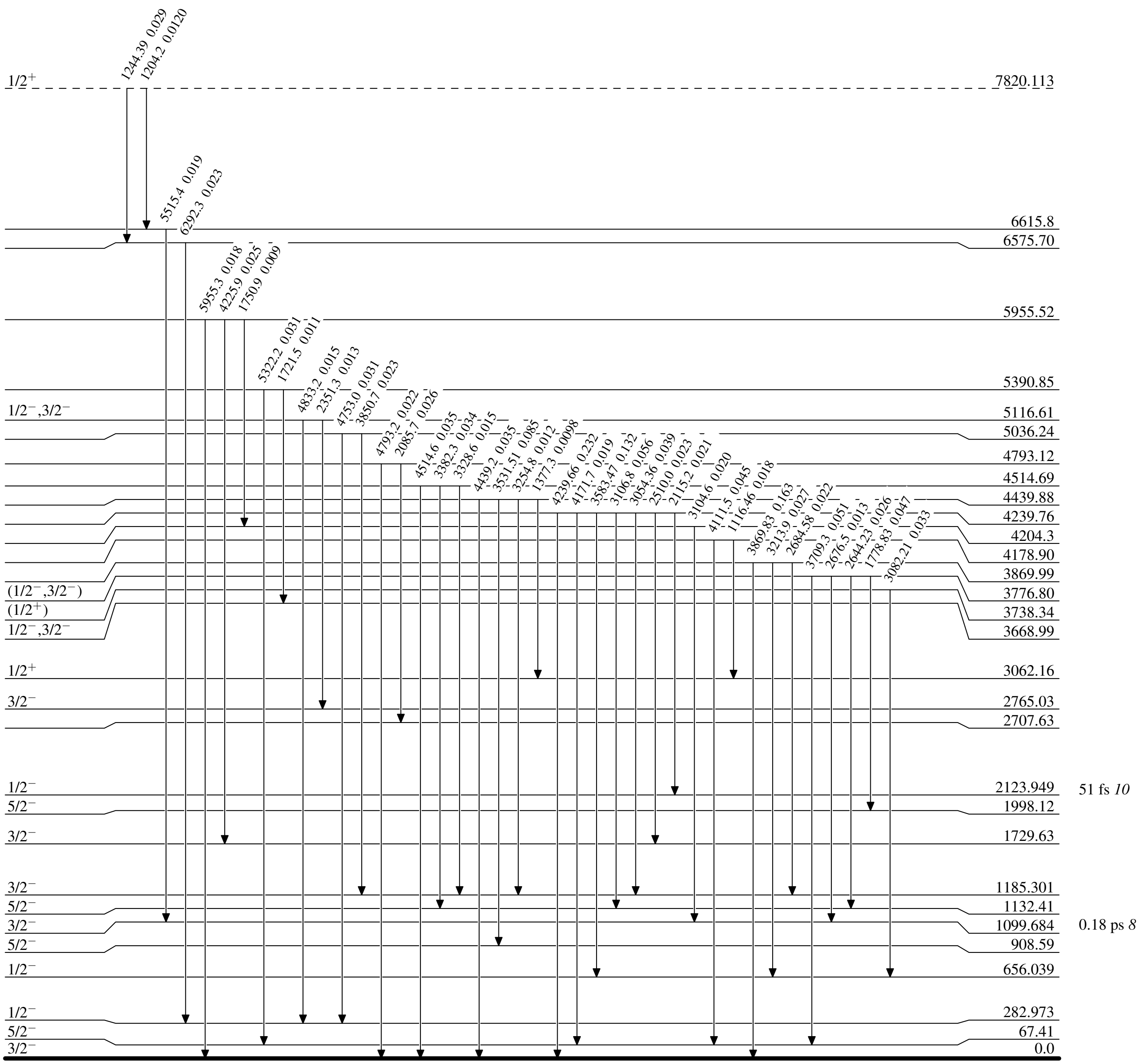
Intensities: Per 100 n-captures

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$

$I_\gamma < 10\% \times I_\gamma^{max}$

$I_\gamma > 10\% \times I_\gamma^{max}$



$^{61}_{28}Ni_{33}$

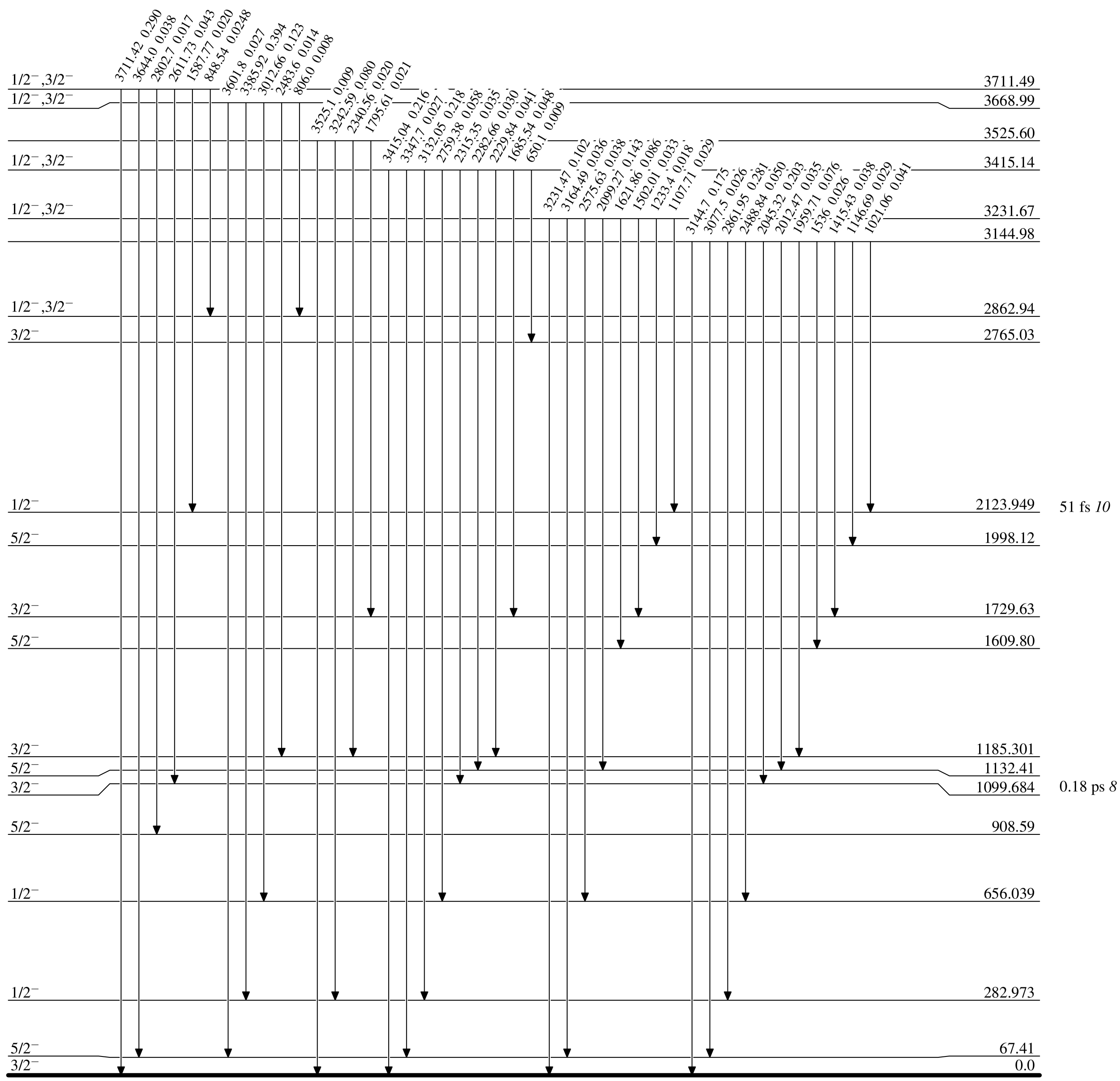
^{60}Ni(n,γ),(pol n,γ) E=thermal 2004Ra23,1993Ha05,1972Ko15

Level Scheme (continued)

Intensities: Per 100 n-captures

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$

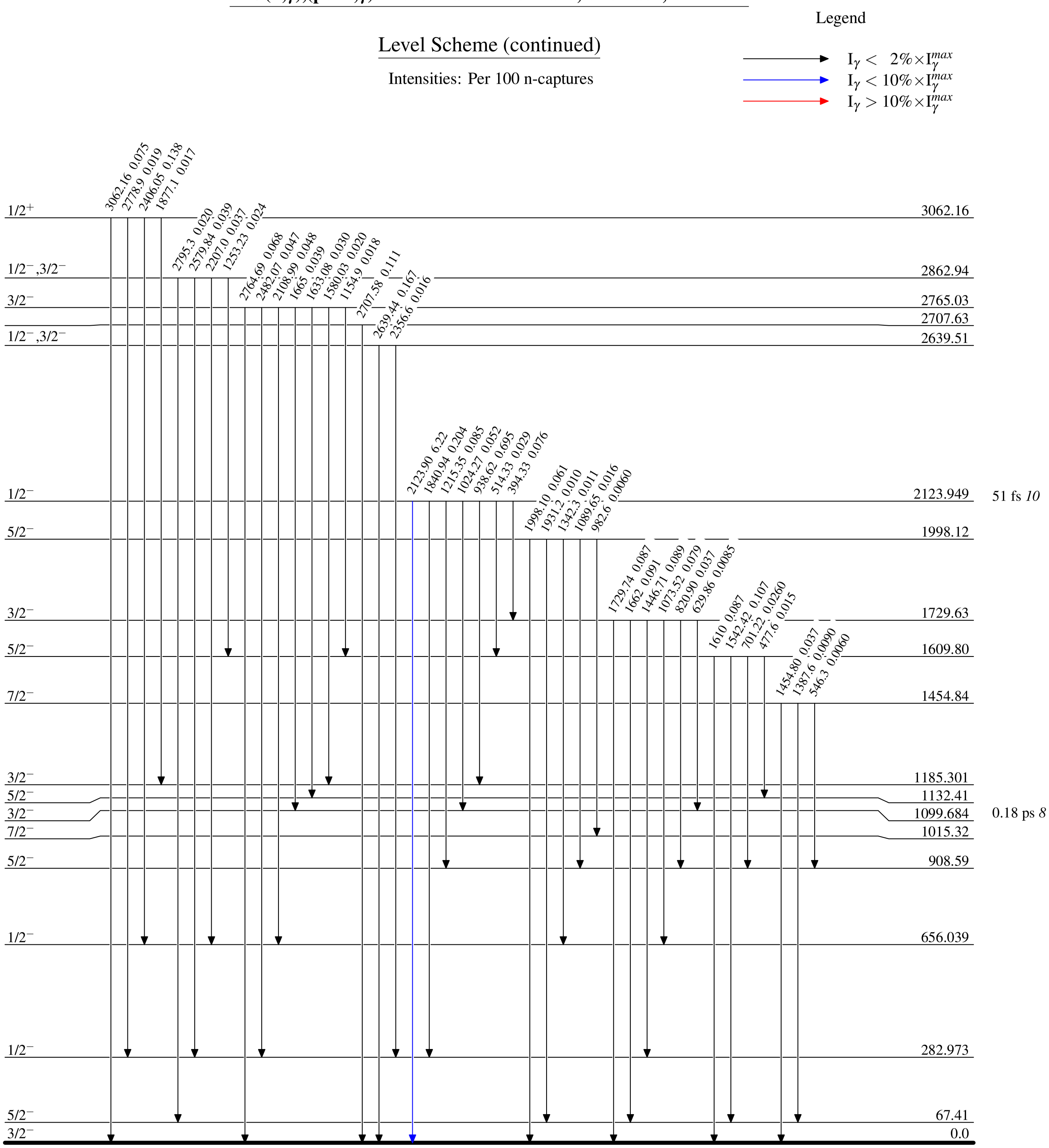


$^{61}_{28}Ni_{33}$

^{60}Ni(n,γ),(pol n,γ) E=thermal 2004Ra23,1993Ha05,1972Ko15

Level Scheme (continued)

Intensities: Per 100 n-captures



$^{61}_{28}Ni_{33}$

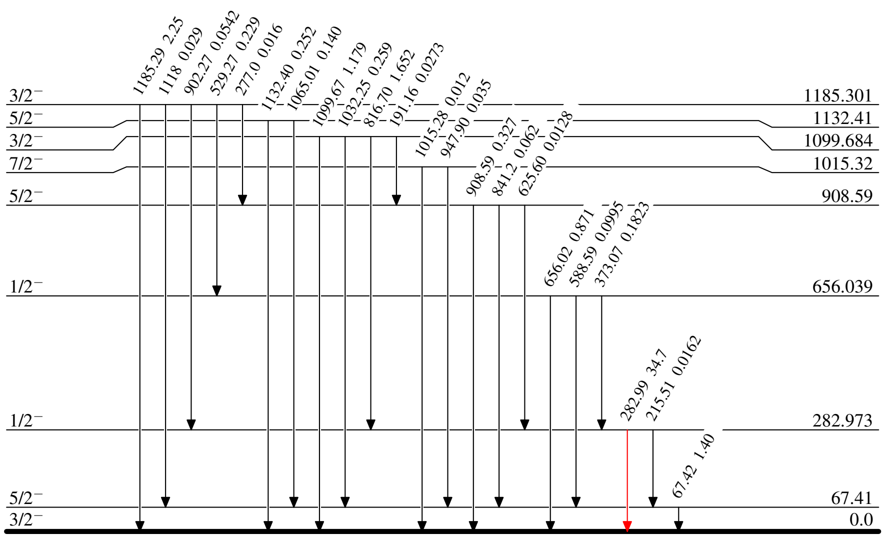
^{60}Ni(n,γ),(pol n,γ) E=thermal 2004Ra23,1993Ha05,1972Ko15

Level Scheme (continued)

Intensities: Per 100 n-captures

Legend

- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$



$^{61}_{28}Ni_{33}$